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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,828	08/01/2003	Fumio Miyagawa	300.1121	1714

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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

PATEL, ISHWARBHAI B

ART UNIT	PAPER NUMBER
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2841

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/631,828

Applicant(s)

MIYAGAWA, FUMIO

Examiner

Ishwar (I. B.) Patel

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1, 2 and 16 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date September 14, 2005 05/02/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: appendix "A".

DETAILED ACTION

Claim interpretation

1. The newly added claim 16 is referring to PANELS, which are not described in the elected specie of figure 2. The PANEL is described in figure 7A-7C and 8A-8B, which are not the elected specie. However, as the claim is broadly reading on the elected specie, has been examined herewith.

Claim Objections

2. Claims 1, 2 and 16 are objected to because of the following informalities:

Regarding claim 1, the language of the claim is grammatically not correct. In particular, it needs the proper use of comma at various places.

Claim 2 depends upon claim 1 and inherits the same deficiency.

Regarding claim 16, the language of the claim is grammatically not correct. In particular, it needs the proper use of comma at various places.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Tessier et al., US Patent No. 5,789,815 (Tessier).

Regarding claim 1, Tessier, in an alternate embodiment of figure 1 (column 54-55), discloses a housing preform, comprising: a bendable plate member (flexible appendages 15, 25, 35 and 45 including elements 16, 26, 36 and 46, column 2, line 25-26), in a shape of an unfolded and flat housing (see figure 1), so that the housing preform is bendable to form the housing, inside of which electronic components (14, 18-20,28-30,38-40 and 48-50) and interconnects, (patterned copper foil providing an electrical interconnect and plurality of patterns for connecting the components, column 4, line 20-35) electrically connecting said electronic components, are formed on the bendable plate member (components 14, 18-20,28-30,38-40 and 48-50 formed on the substrate 12, 16, 26, 36 and 46, see figure 3).

Regarding claim 2, Tessier further discloses said plate member is comprised of a flexible substrate (flex tape 56, column 4, line 54-67) and a flexible protective film (non conductive insulating adhesive film such as polyimide film, column 5, line 3-7) burying and covering said electronic components.

Regarding claim 16, Tessier, in an alternate embodiment of figure 1 (column 54-55), a housing preform, comprising: a bendable plate member (flexible appendages 15, 25, 35 and 45 including elements 16, 26 and 46, column 2, line 25-26), in a two-

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dimensional configuration, having a base (12) and panels (flexible appendages 15, 25, 35 and 45 including elements 16, 26, 36 and 46, column 2, line 25-26) integral with the base (see figure 1), about bend lines defining a perimeter of the base (perimeter of the base 12, see figure 1, and the panels (flexible appendages 15, 25, 35 and 45), when bent, being commonly erected and interconnecting sidewalls relating to the base (appendages 15, 25, 35 and 45 are interconnected to the base, see figure 1) and together, with the base, forming the housing, and electronic components (14, 18-20, 28-30, 38-40 and 48-50) and interconnects (patterned copper foil providing an electrical interconnect and plurality of patterns for connecting the components, column 4, line 20-35) electrically connecting said electronic components being formed, on the base and panels (see figure 5).

5. Claims 1 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by W. B. Klehm, Jr., US Patent No. 3,242,384 (Klehm).

Regarding claim 1, Klehm, figure 1, discloses a housing preform, comprising: a bendable plate member (flexible overlaying conductor strip, column 1, line 71-72), in a shape of an unfolded and flat housing (see figure 1), so that the housing preform is bendable (strips are flexible) to form the housing, inside of which electronic components (package 1 and 2) and interconnects (conductive wires 4) electrically connecting said electronic components are formed on the bendable plate member (see figure 1).

Regarding claim 16, Klehm, figure 1, a housing preform, comprising: a bendable plate member (overlying conductor strip), in a two-dimensional configuration, having a base (base, as marked on figure 1 in appendix "A") and panels (four regions around the cross formed by overlaying the strips, as marked on figure 1 in appendix "A") integral with the base (see figure 1), about bend lines defining a perimeter of the base (perimeter of the base), when bent, being commonly erected and interconnecting sidewalls relating to the base and together, with the base, forming the housing, and electronic components (1, 2) and interconnects (4) electrically connecting said electronic components being formed, on the base and panels (see figure 1, 2 and 3).

Response to Arguments

6. Applicant's arguments with respect to claims 1, 2 and 5 have been considered but are moot in view of the new ground(s) / new explanation of rejection.

Further, applicant on page 7, argues, that the housing preform, as recited in amended claim 1, is comprised of a bendable plate member having a monolithic flat form in the shape of an unfolded 3D housing. Electronic components and interconnects electrically connecting the electronic components are formed on the bendable plate member and inside the housing when the bendable plate member is bent to form the housing. Simply folding the housing preform recited in claim 1 immediately produces a housing with an electronic circuit mounted therein. In contrast, Tessier et al. (hereinafter "Tessier") merely teaches a semiconductor package formed by sealing semiconductor

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chips connected with a flexible board, which has no relationship with the housing preform of the present invention, which is formed in a monolithic flat form in the shape of an unfolded 3D housing. In fact, in Tessier, a protective cap 62 is added on top of the folded flexible boards. (See Fig. 5 and column 5, lines 1-3). Because of the shape of the housing preform, as recited in amended claim 1, no additional protective cap is necessary.

This is not found persuasive. Tessier, in figure 1, discloses a the housing preform in an unfolded 3D housing, in flat form, which is bendable and being bent in the 3D housing as shown in figure 5. Also, as claimed, Tessier discloses the component and interconnect formed on the substrate. Regarding the arguments about the protective cap, the claim with the transition phrase, "comprising", does not exclude the presence of any other element, such as cap, in the structure.

Similarly, the new prior art of W. G. Klehm, also, discloses the housing perform with component and interconnect as claimed.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Forthum, US Patent No. 6,262,895, in figure 2, discloses a housing perform (flex circuit 12) comprising a base (central portion 28 of flexible substrate 14) and panels (end portions 34 of flexible substrate 14).

Nakatsuka, US Patent No. 6,208,521, in figure 2, discloses a film carrier with a base member (1a) and panels (1b) in the form of flat housing preform.

Otake et al., US Patent No. 5,805,422, in figure 7, discloses a housing perform with a base and panels (central square portion, column 4, line 61-67).

8. Applicant's amendment necessitated the new ground(s) / new explanation of rejection presented in this Office action. In particular the recitation "said electronic components are formed on the bendable plate member", has changed the scope of the claim. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (571) 272 1933. The examiner can normally be reached on M-F (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272 1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ishwar (I. B.) Patel
Examiner
Art Unit: 2841
November 7, 2005

March 22, 1966

W. G. KLEHM, JR

3,242,384

CIRCUIT MODULE

Filed Oct. 24, 1963

Fig. 1

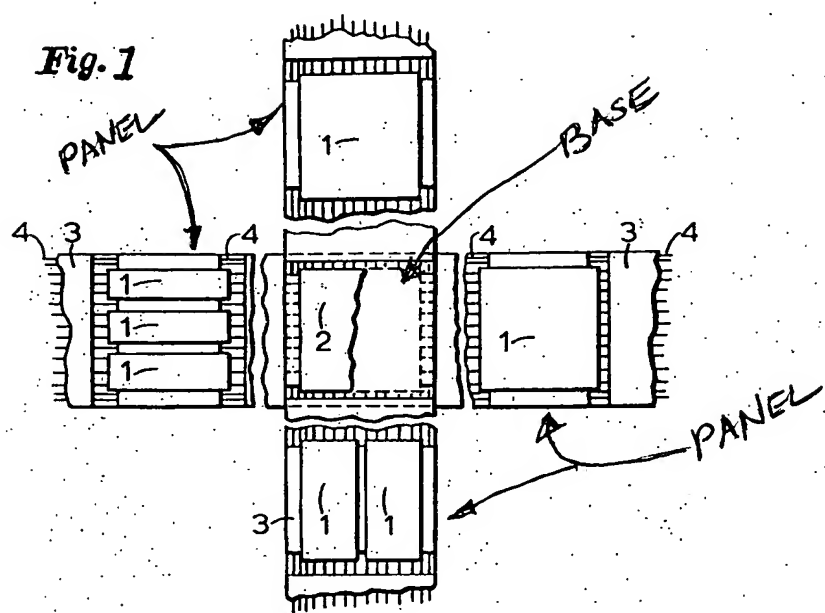


Fig. 2

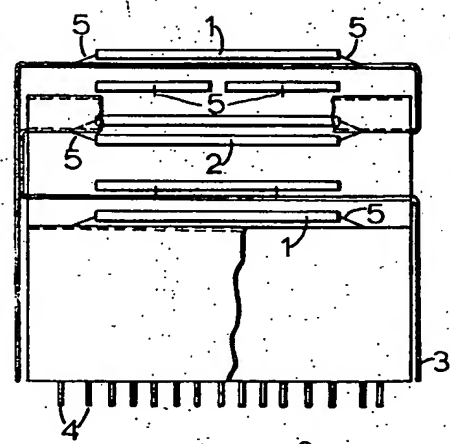


Fig. 3

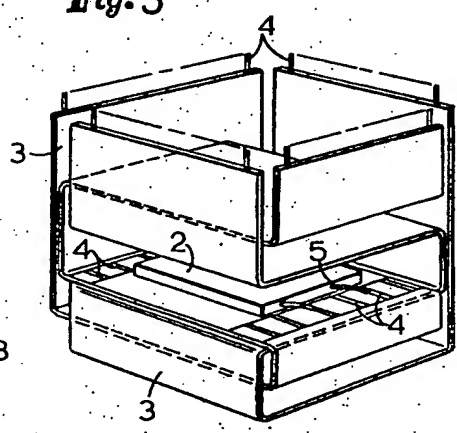
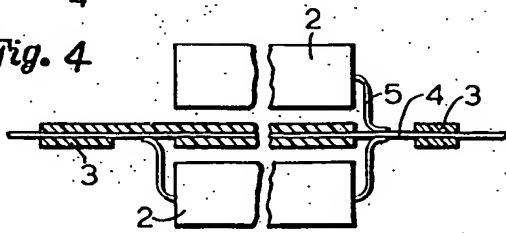


Fig. 4



INVENTOR
WILLIAM G. KLEHM, JR.

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I.B. PATEL
Examiner
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